

TEACHING AND LEARNING ETHICS

Teaching and assessing medical ethics: where are we now?

K Mattick, J Bligh

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See end of article for
authors' affiliations

Correspondence to:
Karen Mattick, Institute of
Clinical Education,
Peninsula Medical School,
St Luke's Campus,
University of Exeter,
Heavitree Road, Exeter
EX1 2LU, UK; karen.
mattick@pms.ac.uk

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Objectives: To characterise UK undergraduate medical ethics curricula and to identify opportunities and threats to teaching and learning.

Design: Postal questionnaire survey of UK medical schools enquiring about teaching and assessment, including future perspectives.

Participants: The lead for teaching and learning at each medical school was invited to complete a questionnaire.

Results: Completed responses were received from 22/28 schools (79%). Seventeen respondents deemed their aims for ethics teaching to be successful. Twenty felt ethics should be learnt throughout the course and 13 said ethics teaching and learning should be fully integrated horizontally. Twenty felt variety in assessment was important and three tools was the preferred number. A shortfall in ethics core competencies did not preclude graduation in 15 schools. The most successful aspects of courses were perceived to be their integrated nature and the small group teaching; weaknesses were described as a need for still greater integration and the heavily theoretical aspects of ethics. The major concerns about how ethics would be taught in the future related to staffing and staff development.

Conclusions: This study describes how ethics was taught and assessed in 2004. The findings show that, although ethics now has an accepted place in the curriculum, more can be done to ensure that the recommended content is taught and assessed optimally.

Significant progress has been made in developing the place of ethics in undergraduate medical curricula over the last two decades. This movement really started with *The Pond Report*,¹ which considered the place of ethics in medical education and made recommendations for the development of ethics teaching. Subsequently, the General Medical Council's (GMC) report on undergraduate medical education, *Tomorrow's Doctors*,² recommended the inclusion of "ethics and legal issues relevant to the practice of medicine" as a knowledge objective and "an awareness of the moral and ethical responsibilities involved in individual patient care and in the provision of care to populations of patients" as an attitudinal objective. By 1997, most medical schools had a written syllabus and provided summative assessment in ethics, but there was still an urgent need for full time teachers.³

In 1998, the UK consensus statement on a model core curriculum for teaching medical ethics and law was published.⁴ This listed the core content for inclusion in undergraduate courses and made recommendations for the organisation of clinical teaching in ethics and law. This approach was proactive and timely, and provided an enviable platform from which to move forward. It was an initiative whose equivalent would have been welcomed in other countries—for example, in the US.⁵ Two years later, while the questions around content had been answered to a large extent, there was ongoing debate about learning and teaching methods.⁶ In particular, there was an unresolved difficulty with regard to curriculum integration, with tension between the need for experiential learning and achieving what was required by the "core curriculum".

ⁱ Summative—and formative—assessment are educational terms that perhaps should be explained for some readers. Summative assessments are typically used to evaluate the effectiveness of instructional programmes at the end of a period of teaching—for example, at the end of the academic year—and aim to make a judgment of student competency. Formative assessments are ongoing assessments that can provide feedback that can shape learning while it is in progress.

No comprehensive evaluation of the state of undergraduate curricula in ethics and law has been performed in the UK in recent years and both the British Medical Association and the governing body of the Institute of Medical Ethics have requested that the situation be reviewed. To address this gap, we carried out a survey of UK medical schools to capture the current situation with regard to teaching and assessment and to identify the current challenges for teachers and curriculum designers.

METHODS

Survey methodology

The methodology was based on a successful format used previously.⁷ One copy of a postal questionnaire (table 2) was sent to the leads in teaching and learning at each of the 28 UK medical schools in May 2004, with a request that they completed it together with other relevant members of staff so that it represented a response from the school. At the same time, letters were sent to the leads in ethics learning at each medical school, to tell them about the project and to encourage them to liaise with the lead in teaching and learning if they wanted to contribute to the questionnaire. E-mail reminders reinforcing the importance of the study were sent to the lead in teaching and learning subsequently to enhance the response rate and provide an electronic copy

Table 1 Key publications relevant to ethics teaching and assessment in UK medical schools, 1987 to present day

1987	<i>Pond Report</i>
1993	<i>Tomorrow's Doctors</i>
1997	Survey of resources for ethics teaching in the UK
1998	UK consensus statement
2000	Review of the literature pertinent to ethics curricula
2004	This study

Table 2 The question schedule from the questionnaire used in this study

Section one: Approaches to ethics teaching and learning at your medical school

1. What are the main aims of ethics teaching in your medical school?
 2. How successful are the aims of ethics teaching, in your opinion?
 3. What changes (if any) do you think should be made to these aims and why?
 4. Please rate the key recommendations for inclusion within the core ethics curriculum by the UK consensus statement, according to the extent to which you feel your course addresses this topic.
 5. How are different teaching/learning methods used to develop knowledge, skills, and attitudes relevant to ethics at your medical school?
 6. If you were designing a new medical curriculum, what would be your preferred **teaching and learning** methods for developing knowledge, skills, and attitudes in ethics?
 7. If you were designing a new medical curriculum, what would be your preferred **assessment** methods for knowledge, skills, and attitudes in ethics?
 8. Does the ethics teaching and learning strategy change with the stage of your course? Please give details.
 9. In your opinion, what is the best stage (or stages) of a medical degree course for learning about ethics and why?
 10. What is the balance between critical medical ethics—for example, ethical theory, analysis, argument, and normative medical ethics—for expected behaviour in given situations, including professional and legal obligations, at your medical school?
 11. Do you think the balance between critical and normative medical ethics is appropriate? Please explain why/why not.
 12. What is the balance between lecture/seminar based teaching and ward/clinic/general practice based teaching?
 13. Do you think the balance between classroom based and practice based teaching is appropriate? Please explain why/why not.
 14. How is learning about ethical practice integrated with clinical teaching at your school?
 15. What is the relationship between learning in medical ethics and medical law at your medical school?
 16. What is the relationship between learning in medical ethics and medical humanities at your medical school?
 17. What is the organisational structure of ethics teaching within the undergraduate programme?
 18. What would be the procedure to introduce a change in the ethics curriculum in the undergraduate course?
 19. In the design of your curriculum, please describe the extent to which the educational principles underpinning ethics teaching at your school have been considered.
 20. Can you describe any changes that have been made to ethics teaching at your medical school that can be directly attributed to specific recommendations—for example, *The Pond Report*, 1987; *Tomorrow's Doctors*, 1993, 2003, and the consensus statement, 1998?
 21. What features of the ethics teaching at your medical school have been particularly successful and why?
 22. What features of the ethics teaching at your medical school have been particularly unsuccessful and why?
 23. Can you suggest methods by which any unsuccessful aspects could be improved?
 24. What concerns do you have about how ethics will be taught in the future?
 25. Can you describe any new opportunities on the horizon for teaching in ethics?
- Section two: Teachers in ethical practice
26. Do you have a full time academic that takes direct **responsibility** for ensuring that undergraduate medical students learn about ethics at your school and, if so, what is that person's job title?
 27. Who **coordinates** ethics teaching and learning across the undergraduate programme?
 28. Who are the "ethics teaching staff" at your school and how are they funded? Please give as much detail as possible in terms of number, employing body, and funding source.
 29. Have there been any gains or losses of ethics teaching posts recently? If so, please outline the circumstances.
 30. Approximately what proportion of the "ethics teaching staff" is medically qualified and, of those, approximately what proportion is from primary or secondary care?
 31. Approximately what proportion have a formal qualification in ethics? Please give details, if known.
 32. Is training provided for the ethics teachers? If so, who organises this, what does it involve, and is it compulsory?
- Section three: Assessment in ethical practice
33. How do the teachers know that students are developing the required knowledge, skills, and attitudes in ethics during and at the end of the course?

Table 2 Continued

34. What assessment formats are used? Can the ethics component be separately identified from integrated assessment formats?
 35. Apart from summative assessment, what opportunities are available to help students to assess their developing knowledge, skills, and attitudes in ethics over time—that is, formative assessment activities?
 36. Is it possible for a student to graduate if they fail their ethics assessment?
- Section four: Your comments
37. Is there anything further that you would like to add?
 38. Do you have any comments or feedback about this questionnaire?
 39. Are you happy for the involvement of your medical school to be acknowledged in any resulting publication, provided that it will not be possible to link specific information with your institution?
 40. Please give your name, position within the medical school, and e-mail address in the space below. This information will enable us to contact you and follow up on any questionnaire responses that were of particular interest.

of the document for those individuals who preferred to complete it that way.

Data analysis

Descriptive statistics were used to describe some quantitative aspects but the small number of possible respondents precluded further analyses. Thematic analysis of the open ended responses was performed to identify issues that were important for ethics teachers. Some of the raw data have been included, selected as statements that particularly illustrated a point or introduced something new or interesting to the discussion. Specific identifying information contained within the quotes has been removed but a respondent number is given.

RESULTS

Response rate

Twenty two out of 28 medical schools completed the questionnaire (79%). Although it was sent to the lead in teaching and learning, the questionnaire was returned by the lead in ethics in 18 cases. The last response was received in November 2004. There was no obvious connection between the non-responders.

Aims of ethics teaching

In their stated aims, 16 schools referred to instilling ethical behaviour in medical students for their future roles as medical professionals, 11 referred to educating students with regard to their legal responsibilities, and 11 referred to providing a conceptual or theoretical understanding of ethics.

The majority of schools deemed their aims for ethics teaching to be successful (17 schools), with a subset stating they were very successful (6). Five schools felt the aims were not successful or successful only in part (three schools).

Poor progression of concepts. Students do well in first years but unable to deepen their learning as limited teaching capacity (Respondent 15).

Just over half of the schools were happy with the existing aims (12 schools) but nine felt change was needed and, of these, three identified a need for greater integration of ethics with other parts of the curriculum. About one quarter of schools referred to work in progress—for example, through curriculum design and development, or revision of aims and learning outcomes.

Teaching and learning

The majority of schools (20) used a combination of large and small group teaching to develop knowledge, skills, and attitudes relevant to ethics. Lectures were generally used for knowledge based key concepts, difficult topics, and to introduce topics, whereas small groups were used for interactive debate and discussion. Other methods employed by schools included problem based learning (PBL) or case based learning; project work; special study modules; presentations; clinical attachments; role play, and interprofessional education. Thirteen respondents suggested additional approaches to teaching and learning ethics that they would like to implement, including ward based teaching with an ethics focus (four schools) and more small group teaching facilitated by staff with expertise in ethics.

The bulk of the formal teaching is from a lecture/seminar based forum as this can be more tightly controlled/assessed than in the variable clinical situations (Respondent 10).

Thirteen schools said the ethics teaching and learning strategy changed with the stage of their course—for example, becoming increasingly clinically orientated (eight schools); complex (three); applied (three); drawing on student experience (two), or encouraging a self directed approach by students (two). Twenty respondents felt ethics should be learnt throughout the medical course and 13 said ethics teaching and learning should be fully integrated horizontally with the rest of the course.

When asked about the balance between critical and normative ethics, the consensus was that, while it is important for students to have some theoretical grounding, integrating this theory into clinical scenarios was more popular with students. Most respondents agreed that both aspects needed to be covered but opinions about the relative balance varied. Seven schools spent more time on normative medical ethics and four spent more time on critical medical ethics. Four schools explained that their courses started with an emphasis on critical medical ethics and moved toward normative medical ethics as the course progressed. The majority (16) thought the balance between the two was appropriate.

Previously, there was greater emphasis on ethical theory, but students found this confusing and “dry” according to their evaluations. Integrating theory into resolving dilemmas has resulted in greater student enjoyment without diluting the teaching of the theory (Respondent 3).

Where the balance was described, seven schools provided more classroom based teaching and three had more practice based teaching. Ten thought this balance appropriate, and six said they would like more practice based/clinical teaching. Learning about ethical practice was integrated with clinical teaching through the use of clinical teachers (six schools); assessment (three); as a longitudinal theme (three); case based teaching (two); by relating teaching to student experience (two), and through shared aims and objectives (two).

I have resisted having an “ethics module” at a particular stage of the course. Although this would be neat administratively, it gives misleading messages—either that this is the one place where ethics belongs, or that it is a subject on its own, which is not integrated in mainstream training (Respondent 14).

Some existing ethics learning is opportunistic and experiential and has always been there to a greater or lesser extent. We need to identify and make this learning more explicit and systematic. Newer elements of ethics teaching were carefully designed, taking account of educational theory, principles of medical ethics, and the main core content (Respondent 2).

Most schools (15/16) said the relationship between learning ethics and medical law was close, whereas the relationship between ethics and medical humanities was poor or absent (10/17).

Assessment

When asked about preferred assessment methods, 20 schools felt variety in assessment tools was important, and of those identifying specific methods, the median number identified was three and the maximum was five. Only two schools suggested a single method of assessment, both favouring short answer questions. The methods suggested included essays (eight); multiple choice or extended matching questions (seven); an objective structure clinical examination (OSCE) (six); short answer questions (five); a portfolio (five), and a viva (two). Three schools specifically identified different assessment methods for knowledge, skills, and attitudes.

When asked about existing assessment methods, two was the norm (range one to five), including essays (10 schools); OSCE or equivalent (nine); multiple choice or extended matching questions (nine); short answer questions (six); written paper (three); portfolio (three); a viva (two), and a presentation (two). All respondents to this question indicated that ethics could be separately identified from integrated assessment formats, although two acknowledged this was difficult. Fifteen schools said it was possible for a student to graduate if they failed their ethics assessment.

Schools said they knew that students were developing the required knowledge, skills, and attitudes in ethics through assessment (20 schools); direct student contact (five), and feedback (two). Additional opportunities to help students assess their own developing knowledge, skills, and attitudes in ethics included feedback (eight schools); formative assessment (three); self assessment (two); seminars (two); reflection (two), and group discussion (two).

Small group teaching enables students to get continuous responses to their arguments and ethical positions (Respondent 16).

Staffing, staff development, and succession planning

The number of “ethics teachers” ranged from 0 (in two schools) to 60 (median = 3). In general, there appeared to be a small number of dedicated ethics teachers—for example, one to three, plus a much larger number of sessional tutors. Eleven respondents identified a single individual who coordinated ethics teaching and learning across the undergraduate programme (including four lecturers, three senior lecturers, one reader, and one professor); five identified two people, and four identified a group of people.

I think ethics needs a product champion in every medical school—it is easy for it to become everyone’s and therefore no one’s responsibility (Respondent 14).

The proportion of medically qualified ethics teaching staff was highly variable. Four schools had no medically qualified

staff, while eight schools had more than half and two schools had all medically qualified staff. Six said the ethics teaching staff came mainly from a secondary care background, whereas three had more from primary care. The proportion of staff with a formal qualification in ethics was surprisingly high, ranging from 0% in four schools to 100% in seven schools (median = 63%, mode = 100%). Two schools referred to staff that were studying for a relevant qualification. Ten schools provided training for the ethics teachers but this was generally optional and in house.

There was usually more than one funding source for staffing within a school and often several, including the Higher Education Funding Council (HEFC) (11); the medical school (five); the university (four); the National Health Service (NHS) (four); service increment for teaching (SIFT) (two), and postgraduate course income (two). Four schools used volunteers. Eight schools had gained posts recently (including two lecturers, two senior lecturers, one reader, and one assistant professor) and five had lost posts. The responses highlighted the complexity of routes by which individuals become involved in teaching and remunerated for their time.

In 2000 or so everything looked rosy; now we're under great pressure, RAE [research assessment exercise] obsessed senior staff have put at least one post under threat, and the incentives to teach and to teach well are ever weaker (Respondent 9).

Strengths and weaknesses of ethics teaching

Respondents perceived the most successful aspects of their courses to be the integration (10); small group teaching (four); special study modules or equivalent (three); clinical teachers (three) and teachers in general (two); opportunities for peer analysis/assessment (two), and timeliness of the teaching (two). Weaknesses identified included a need for greater integration in their course (six schools); the heavily theoretical aspects of ethics, which were unpopular with students (five); a lack of time/resources in comparison with student numbers (three), and not enough small group teaching (two). Ideas suggested to improve weak areas included staff development (five schools); better integration of ethics with other topics (four); more small group teaching (two); more staff (two); ensuring learning was practical and relevant (two), and better assessment (two).

... the most successful teaching has involved training already skilled clinical teachers in the principles of values based reasoning. The integration of clinical and values skills has the most impact on students and first indications are that this is reflected in their abilities (Respondent 12). Medical students seem mostly very action oriented and rather against thoughtful but incisive reflection (Respondent 2).

All respondents identified new opportunities for teaching in ethics, including e-learning and information technology (IT) (five schools); integration (four); staff development (four); links with postgraduate education (three); simulation (two), and new topic areas (two). Key concerns about how ethics will be taught in the future included staffing and staff development (12); the place of ethics in the curriculum (three); the numbers of students (three); the potential loss of small group teaching (three), and integration (two).

There does not seem to be a cohort of medical ethicists in waiting to take over the reins in future. Many people are

interested and will help, but to create and sustain a vertical theme that works over five years requires considerable investment of personal time, energy, and leadership (Respondent 6).

I am looking forward to the integration of ethics and law with other elements of the curriculum. I am not concerned about this as there is great importance placed on our contribution by all the key senior academic leads, and I am sure the review will leave our teaching in an even stronger position (Respondent 3).

Organisational structure of ethics teaching

The study failed to unpick fully the organisational structure of ethics teaching and evidently this was very complex. In most schools (18), ethics teachers could not make changes to the course in isolation and would propose change to a committee with an overview of the course. Educational principles underpinning ethics teaching had generally been thoroughly considered in the curricular design of 16 schools, with a further six having considered them to some degree.

DISCUSSION

We will report separately that only four of the 12 topic areas recommended by the UK consensus statement were covered consistently well in undergraduate courses and this study provides additional information pertinent to that finding.⁸ Respondents had achieved broad consensus about the "gold standard" for ethics teaching and assessment, both in terms of content and delivery but had not always been successful in implementing this. One respondent in this study emphasised the importance of taking into account "...the way in which teaching, curriculum and assessment are shaped by contingencies such as staffing, morale, and resources, rather than by 'intellectual' factors such as pedagogically driven choices of content or by consensus on what is 'best practice'", highlighting the numerous barriers that stand in the way of good learning.

Even prior to this study, medical ethics educators in the UK agreed that medical ethics should be integrated horizontally and vertically to show that ethical issues were ubiquitous and that ethical practice is central to being a doctor.⁶ In this respect, the UK is ahead of the game, compared with the US and Canada where ethics courses were generally not integrated at the same stage.⁹ Our study identifies integration as both a strength and an area that needs attention, meaning it is the goal to which teachers aspire but is difficult to achieve in a coordinated way. The tensions between the need for experiential learning and achieving what is required by the "core curriculum" have already been described.⁶ In a fully integrated programme, perhaps only the students will be aware of the full range of opportunities for learning about ethics, which leads to a lack of control and anxiety among the teachers who are responsible for ensuring that learning about ethics does occur. This could also explain the teachers' perception that the ethics topics recommended in the UK consensus statement are covered suboptimally⁸; the students' perception could be that these topics are covered very well, because of their perspective of experiencing the course as a whole. An integrated course undoubtedly requires good coordination to identify relevant learning opportunities (UK consensus statement⁴) and ensure that the core curriculum is being covered and may be time consuming to do well, requiring staff liaison with colleagues in other disciplines—for example, through multidisciplinary curriculum meetings.

This study raises the worrying finding that it is often possible for students to fail ethics and still graduate, meaning that young doctors may not have achieved the objectives for ethics set out in *Tomorrow's Doctors*.² The reasons underpinning this observation may relate to the integrated nature

of assessment leading to a possibility of compensating for one area of deficiency by another area of strength, the difficulty of developing competency based assessment that effectively taps a student's moral character, or both. Despite the inherent difficulties, the importance of assessing ethics has been established²⁻⁴ and failing ethics must constitute a barrier to progression if this topic is to be taken seriously within the curriculum.

Small group teaching was widely accepted to be the best approach for classroom based teaching in this survey, although respondents observed that certain topics could be covered adequately by a didactic delivery. There is now mounting evidence that small group teaching is an effective strategy for learning about medical ethics, being superior to lectures for developing moral reasoning skills¹⁰ and normative identification with the future profession.¹¹ However, small group teaching usually requires more staff with relevant expertise.

The core group of ethics teachers was usually small in number within a medical school, with a single individual often responsible for ethics learning, the coordination of ethics teaching, and much of the delivery itself. Although a single identified person to take responsibility for ethics learning is desirable and recommended by *The Pond Report*, the fact that an individual is often so central to all activities within the ethics curriculum raises questions about succession planning and the contingencies in place for their replacement. Unfortunately, succession planning appeared to be universally poor, with one respondent commenting that there did not seem to be "up and coming" ethics teachers ready to take on these roles.

A survey of medical ethics education at US and Canadian medical schools⁵ provides a useful comparison with the findings of this study. These data were collected in 2000 as opposed to 2004. Areas of similarity in the findings were the complexity of employment arrangements; variability in commitment to ethics teaching; the recognised need for horizontal and vertical integration, and a lack of ethics teaching staff. Lehmann's survey⁵ also identified a lack of coordination between preclinical and clinical ethics, however, which did not come out strongly here, perhaps as a result of the greater integration in the UK in 2004. The US/Canadian study indicated that most schools spent very little time on the theoretical aspects of ethics, even in the early stages of the course. Finally, the Lehmann study highlighted a lack of faculty development and a scarcity of qualified teachers.⁵ Given that our core ethics teachers appear to be very well qualified and experienced, we should be aware that UK ethics teachers could be tempted to move abroad for employment.

The key strengths of our study were its high response rate and timeliness. The nature of the questions, combining quantitative and qualitative approaches, allowed us to gain a better understanding of the issues than could have been achieved through a numerical approach alone. One weakness was that the responses represent 18 ethics teachers and four leads for teaching and learning, and these two groups of individuals could have different viewpoints, as demonstrated by the comparison of responses from deans and ethics course

directors in the Lehmann survey.⁵ We stated clearly in the covering letter, however, that we wished there to be a collaborative approach between these two groups, with a view to making a response on behalf of the school, and we have no evidence to suggest that this did not occur.

The mood of respondents was generally positive. Ethics now has an established place within the undergraduate core curriculum.⁶ Respondents were upbeat about the future, could identify new opportunities on the horizon for teaching in ethics and were well qualified and positioned to take full advantage of them. There are still many challenges ahead, however, if we are to improve the existing provision of teaching and assessment but also to keep abreast of new developments. One such challenge is the increasing integration of ethics learning into primary care and community settings, requiring the adequate representation of community and primary health care teams with expertise in ethics.⁶ A clear concern among respondents to this questionnaire was staff development in the future. This will be important for new people getting involved in ethics teaching and assessment as a result of increasing integration, but also to retain, develop, and value the existing ethics teachers.

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Authors' affiliations

K Mattick, Institute of Clinical Education, Peninsula Medical School, Exeter, UK

J Bligh, Institute of Clinical Education, Peninsula Medical School, Plymouth, UK

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REFERENCES

- 1 **Institute of Medical Ethics.** *The Pond report: report of a working party on the teaching of medical ethics.* London: IME Publications, 1987.
- 2 **General Medical Council.** *Tomorrow's doctors: recommendations on undergraduate medical education,* London, 1993.
- 3 **Fulford KW, Yates A, Hope T.** Ethics and the GMC core curriculum: a survey of resources in UK medical schools. *J Med Ethics* 1997;**23**:82-7.
- 4 **Consensus statement by teachers of medical ethics and law in UK medical schools.** Teaching medical ethics and law within medical education: a model for the UK core curriculum. *J Med Ethics* 1998;**24**:188-92.
- 5 **Lehmann LS, Kasoff WS, Koch P, et al.** A survey of medical ethics education at US and Canadian medical schools. *Acad Med* 2004;**79**:682-9.
- 6 **Goldie J.** Review of ethics curricula in undergraduate medical education. *Med Educ* 2000;**34**:108-19.
- 7 **Mattick K, Marshall R, Bligh J.** Tissue pathology in undergraduate medical education: atrophy or evolution? *J Pathol* 2004;**203**:871-6.
- 8 **Mattick K, Bligh J.** Undergraduate ethics teaching: revisiting the Consensus Statement. *Med Educ* 2006; in press.
- 9 **Silverberg LI.** Survey of medical ethics in US medical schools: a descriptive study. *J Am Osteopath Assoc* 2000;**100**:373-8.
- 10 **Self DJ, Wolinsky FD, Baldwin DC.** The effect of teaching medical ethics on medical students' moral reasoning. *Acad Med* 1989;**64**:755-9.
- 11 **Goldie J, Schwartz L, McConnachie A, et al.** Impact of a new course on students' potential behaviour on encountering ethical dilemmas. *Med Educ* 2001;**35**:295-302.